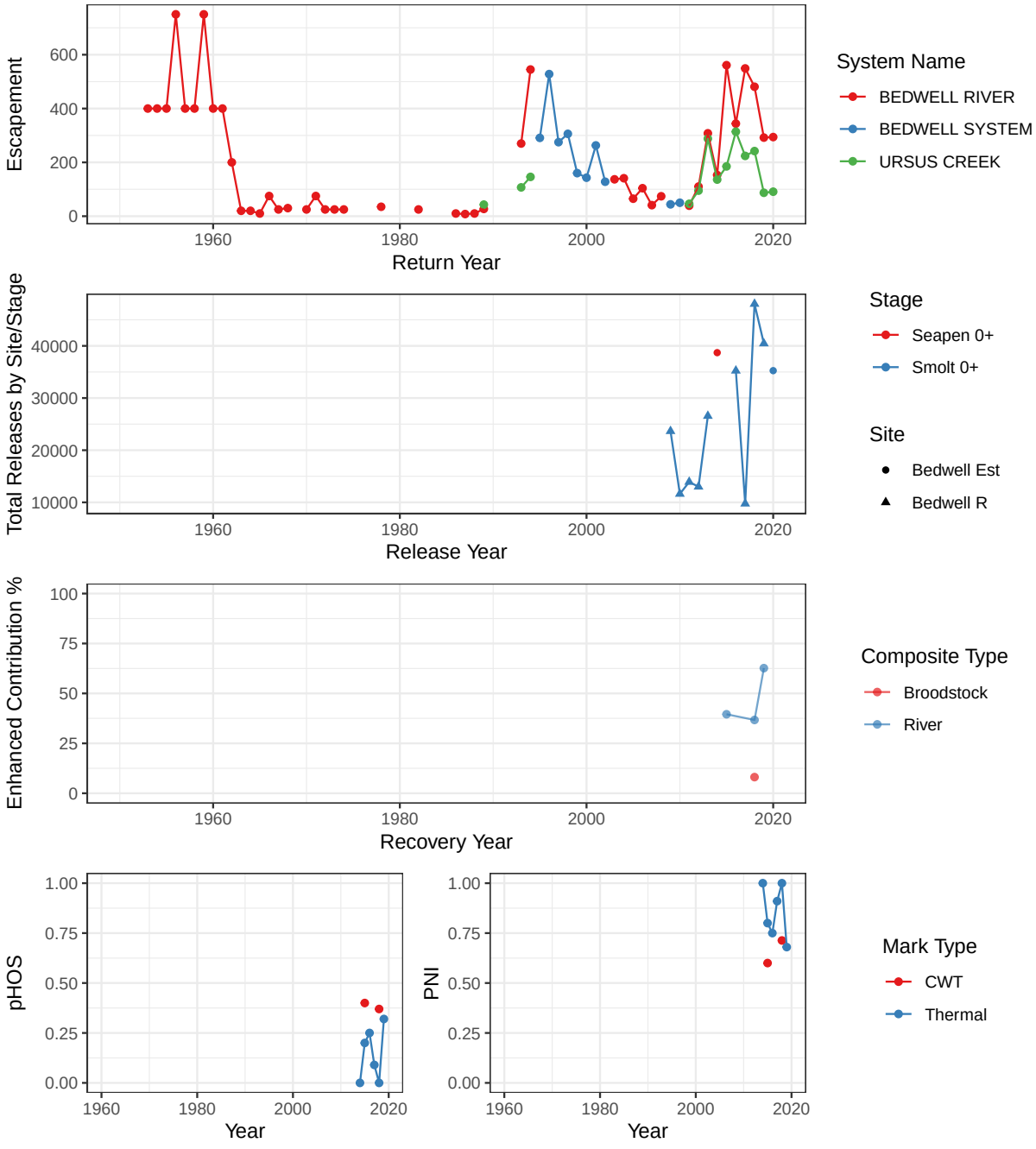
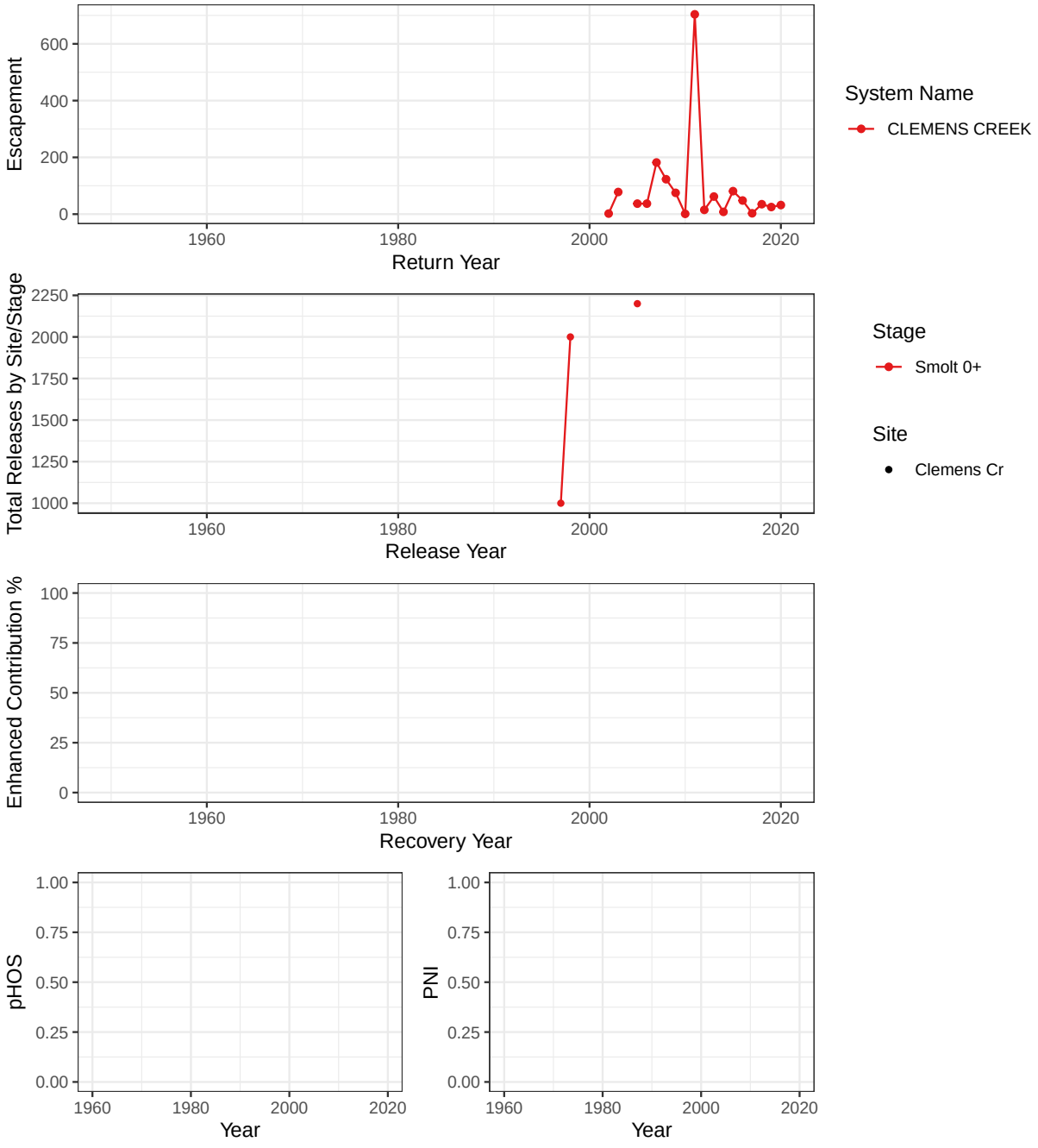
Appendix X: Chinook Rebuilding System Dashboards

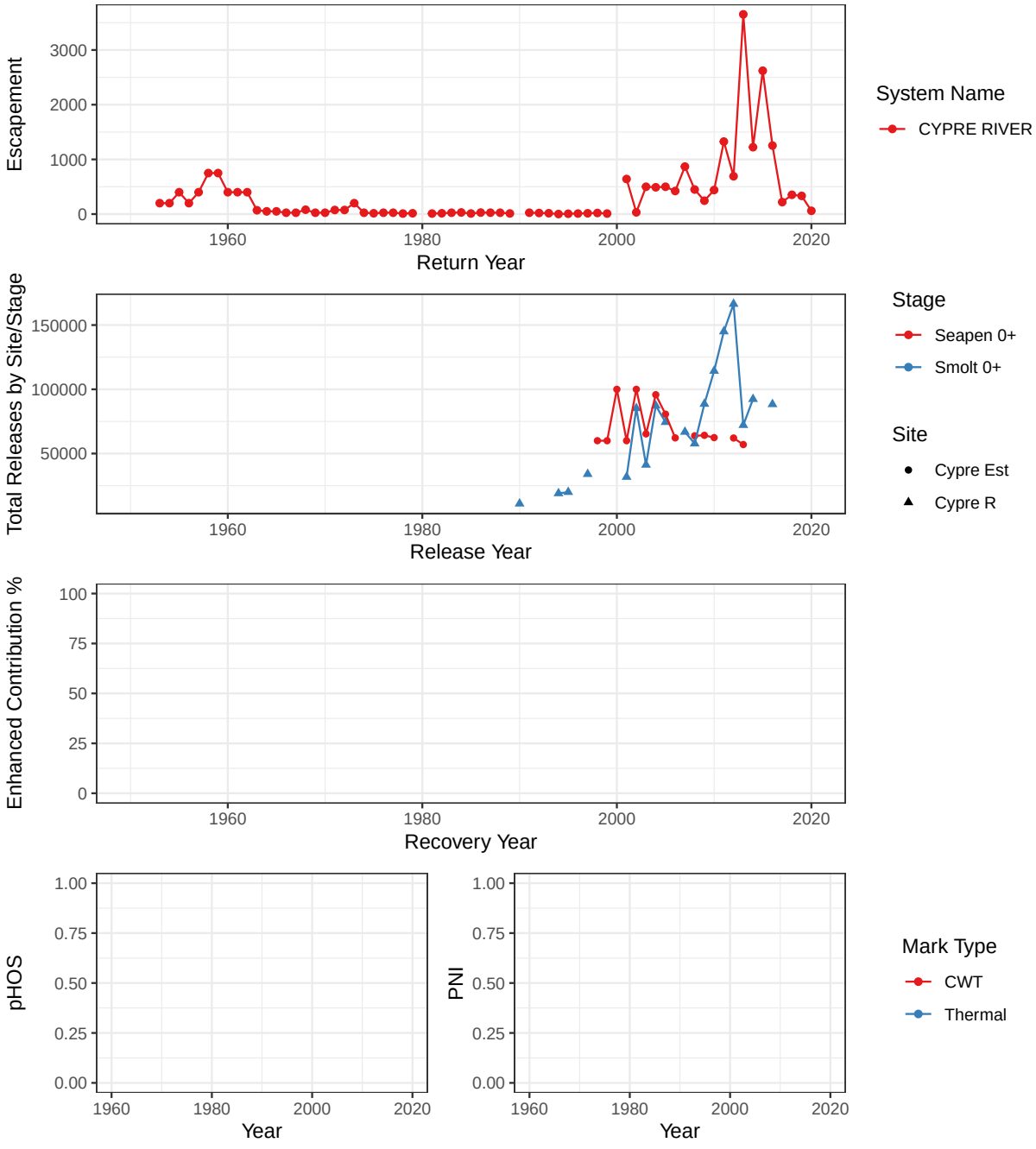
Bedwell River (WCVI)



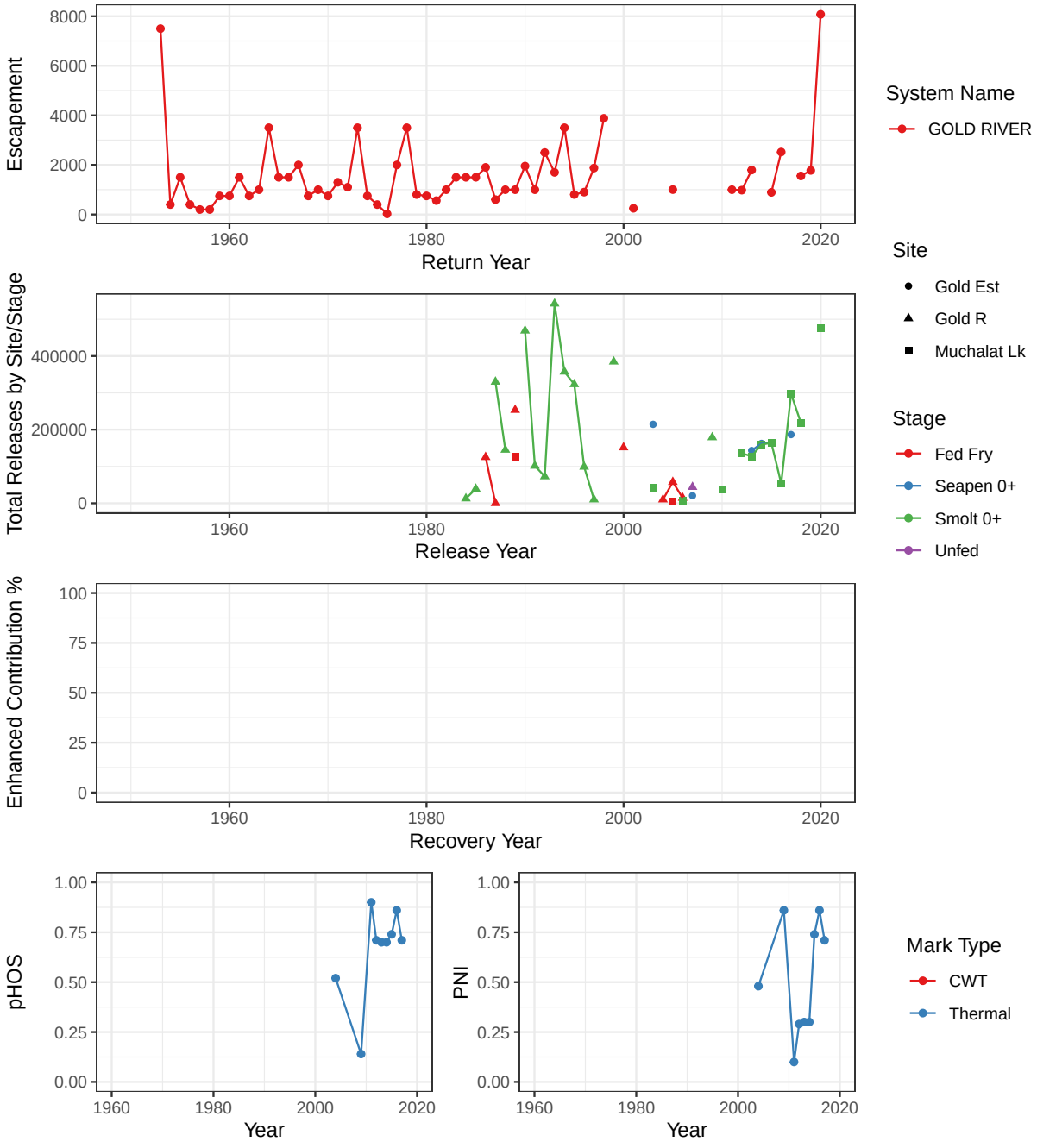
Clemens Creek (WCVI)



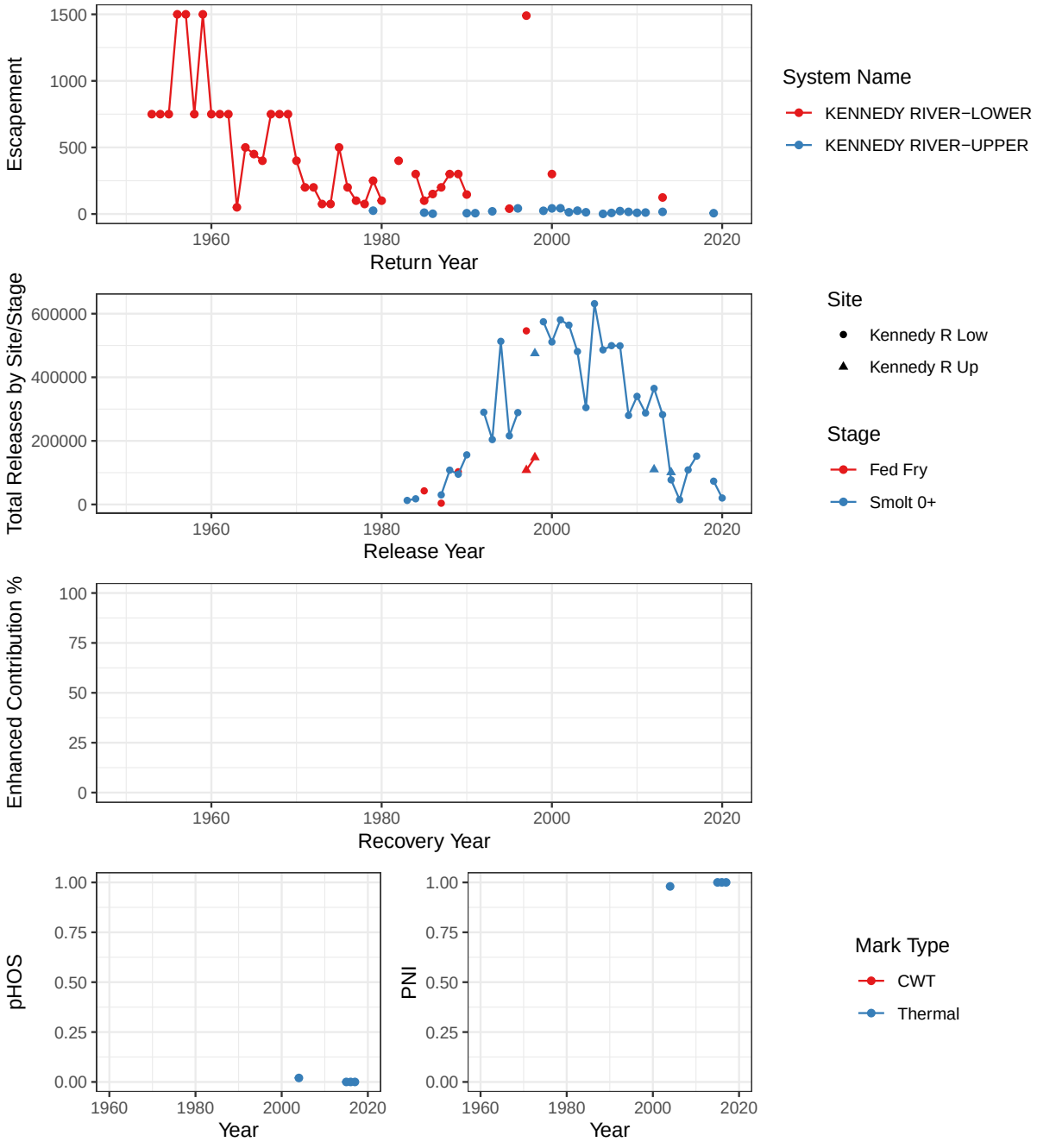
Cypre River (WCVI)



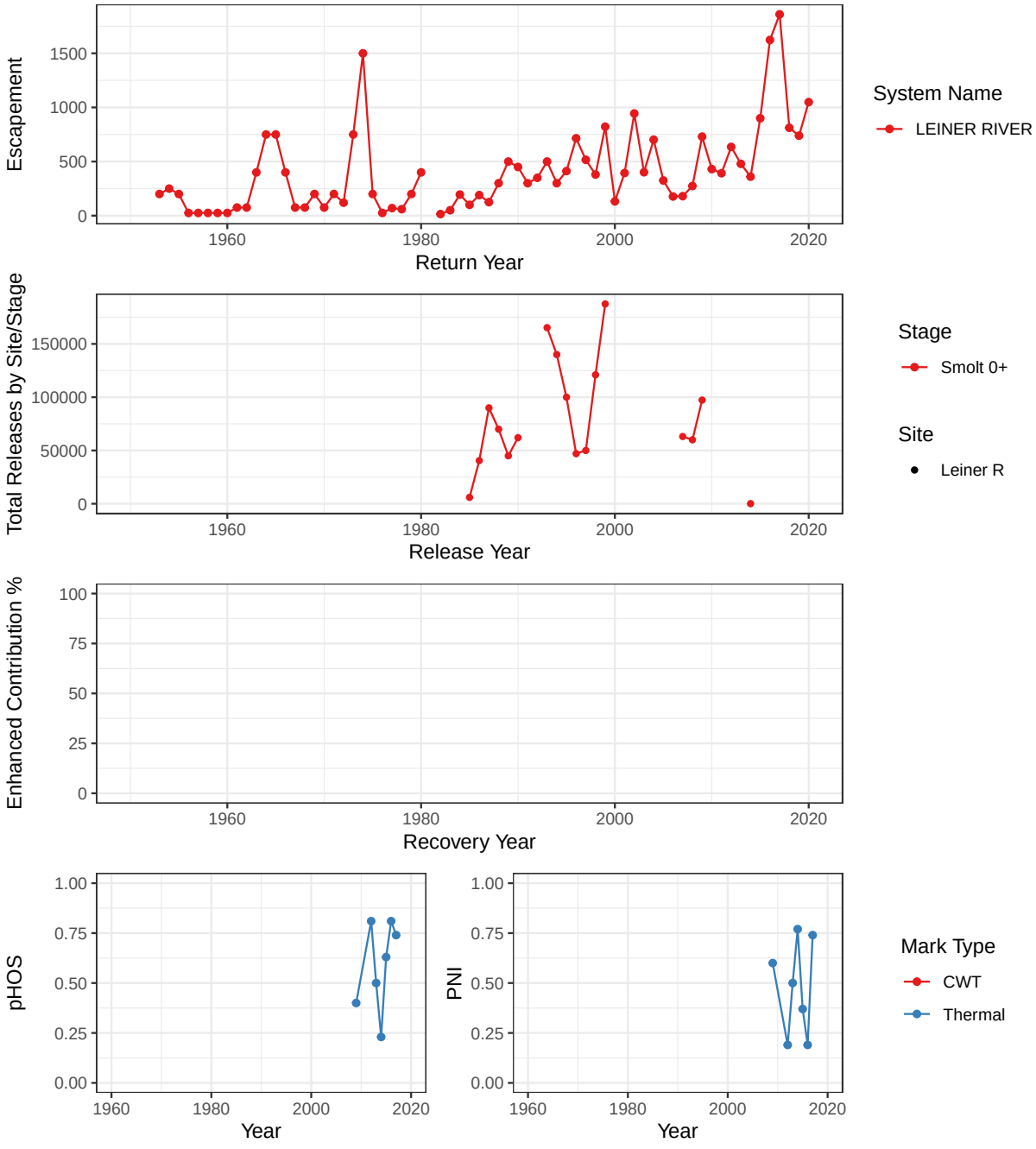
Gold River (WCVI)



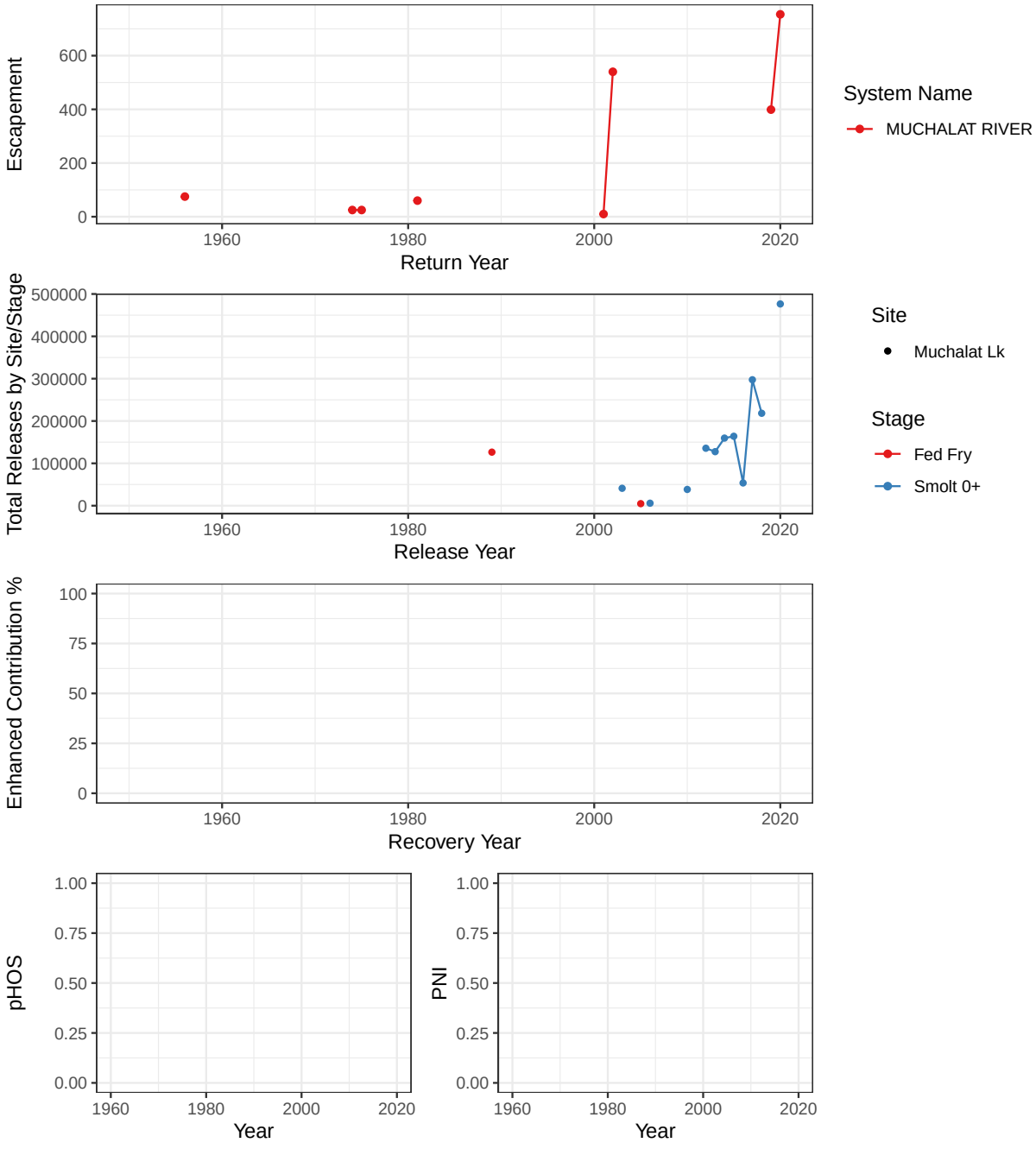
Kennedy River (WCVI)



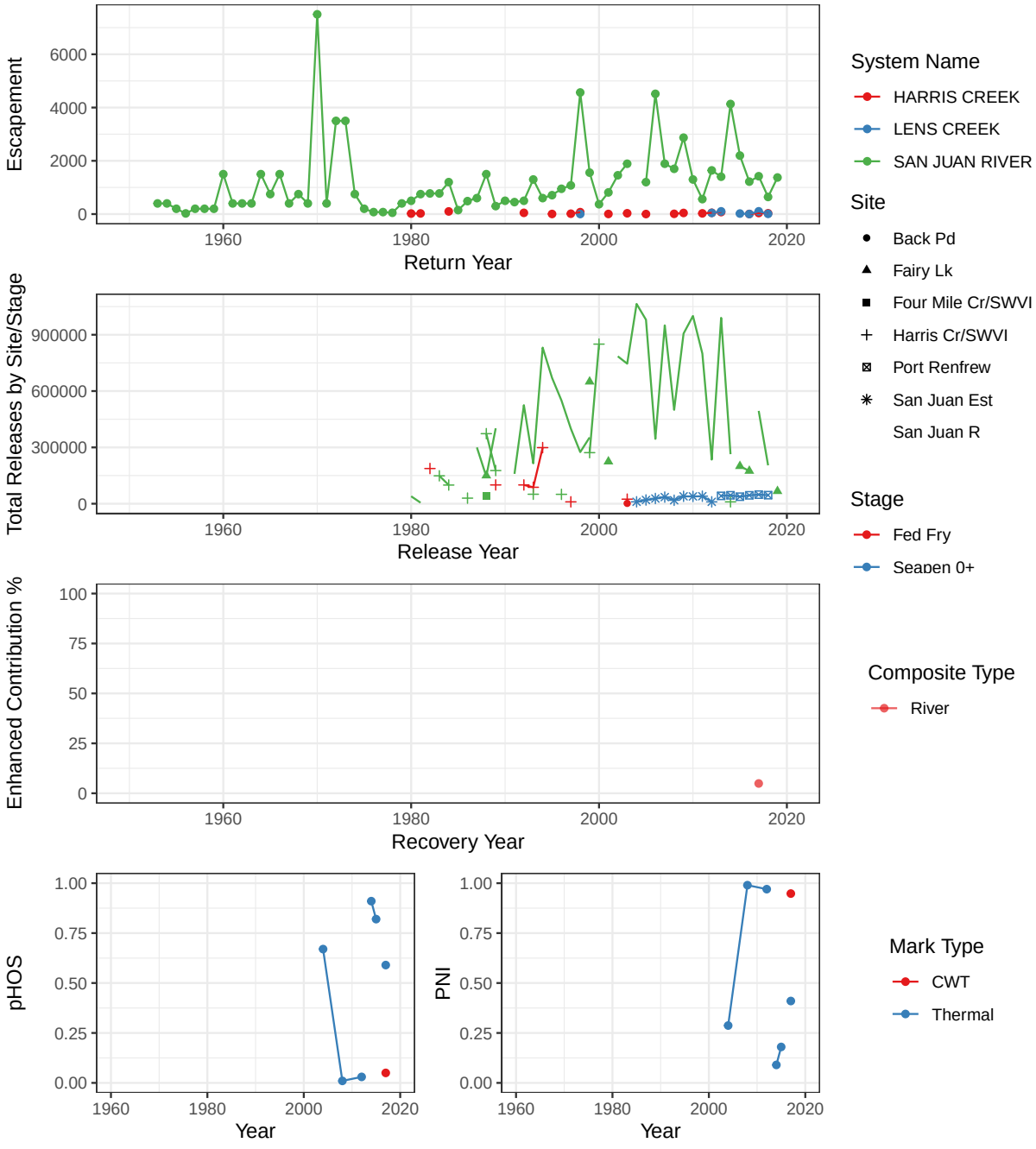
Leiner River (WCVI)



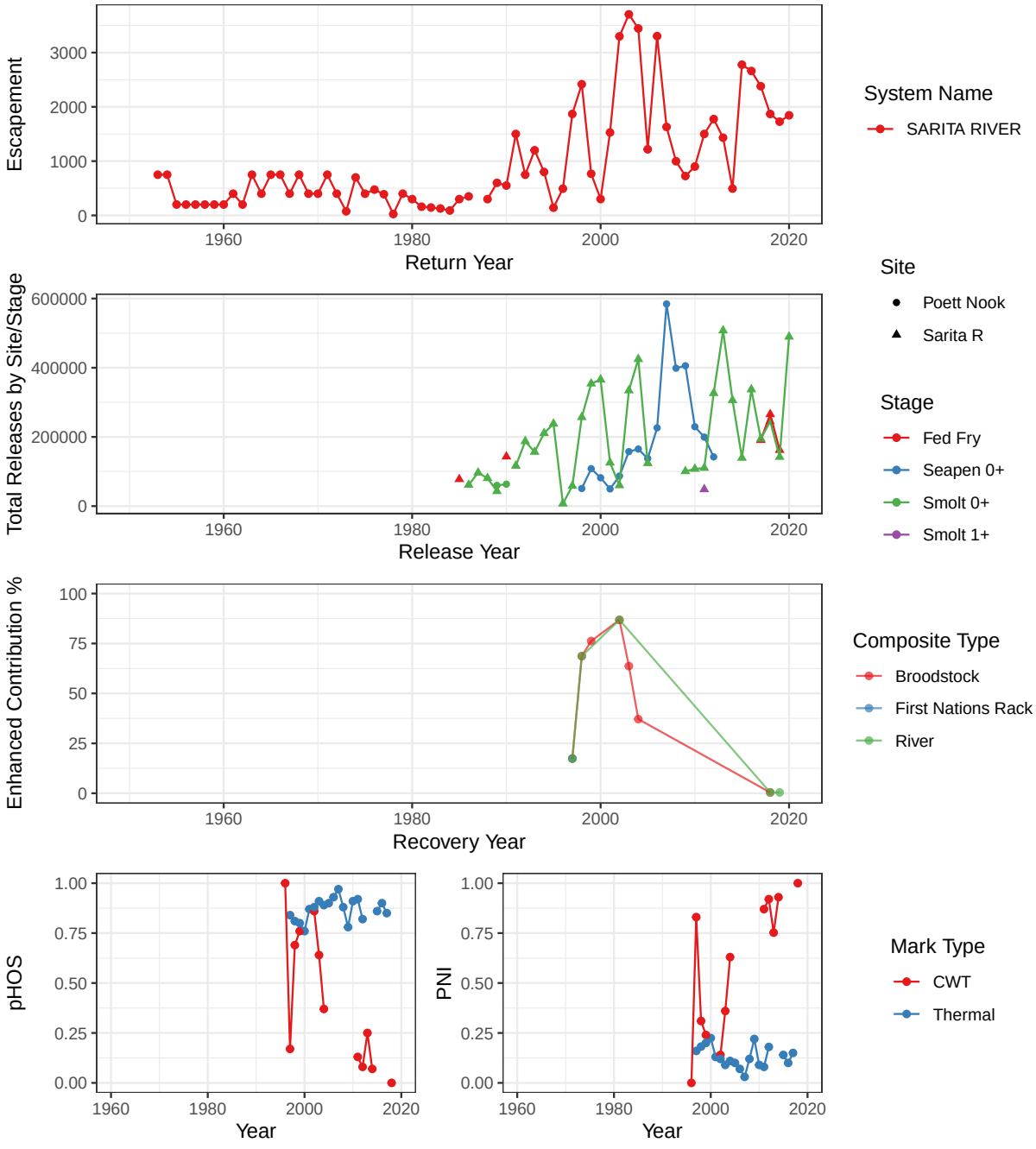
Muchalat River (WCVI)



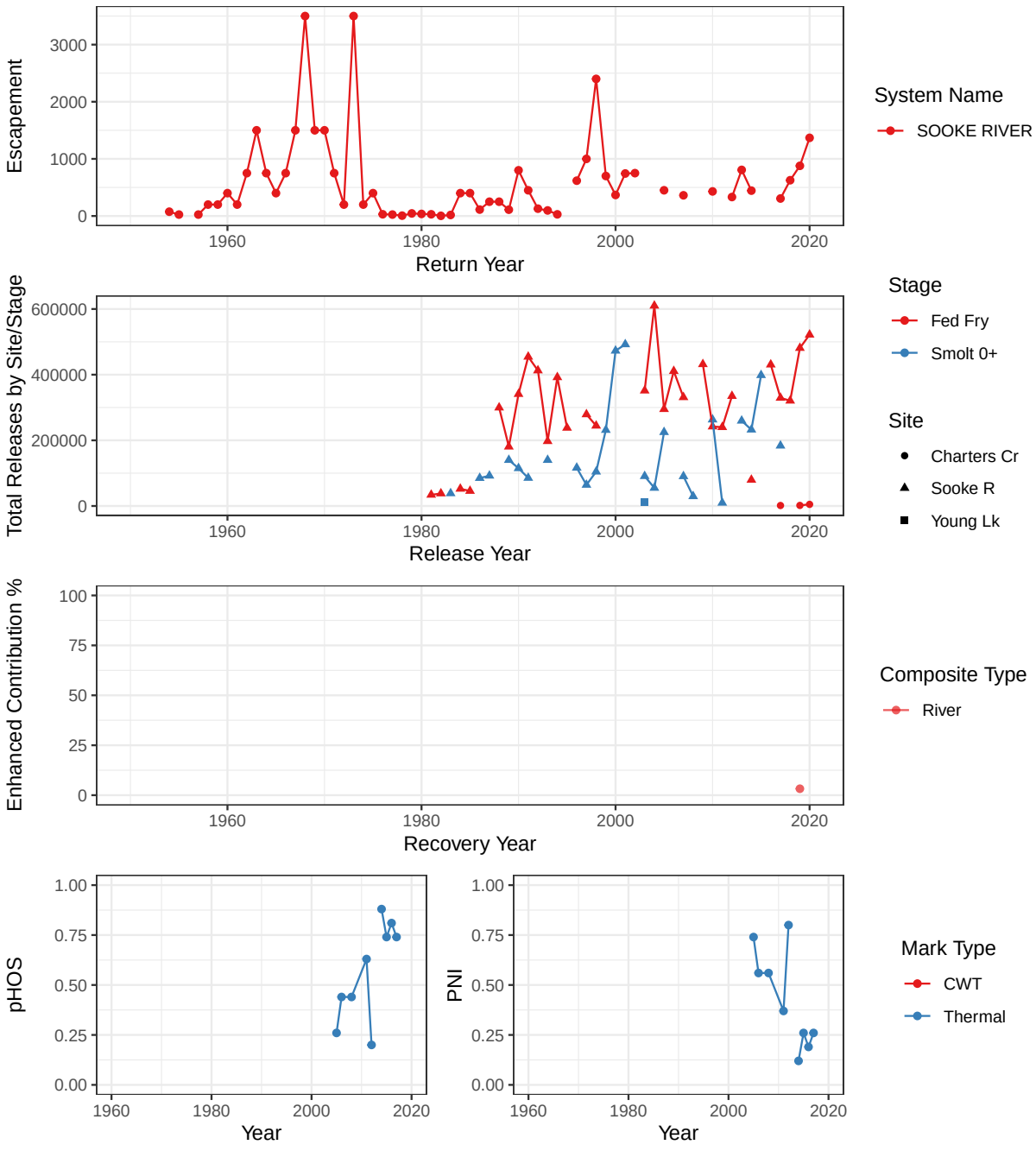
San Juan River (WCVI)



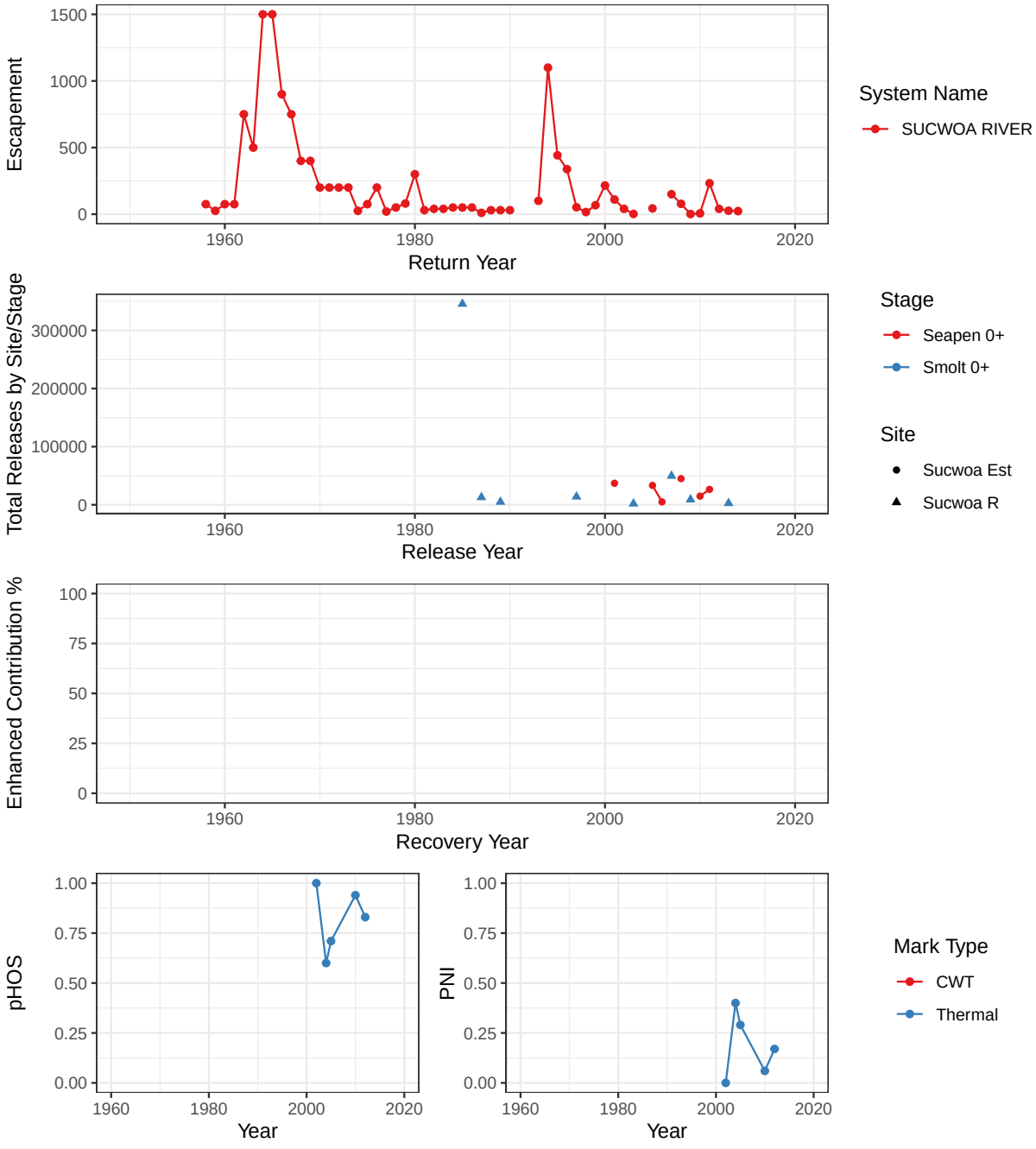
Sarita River (WCVI)



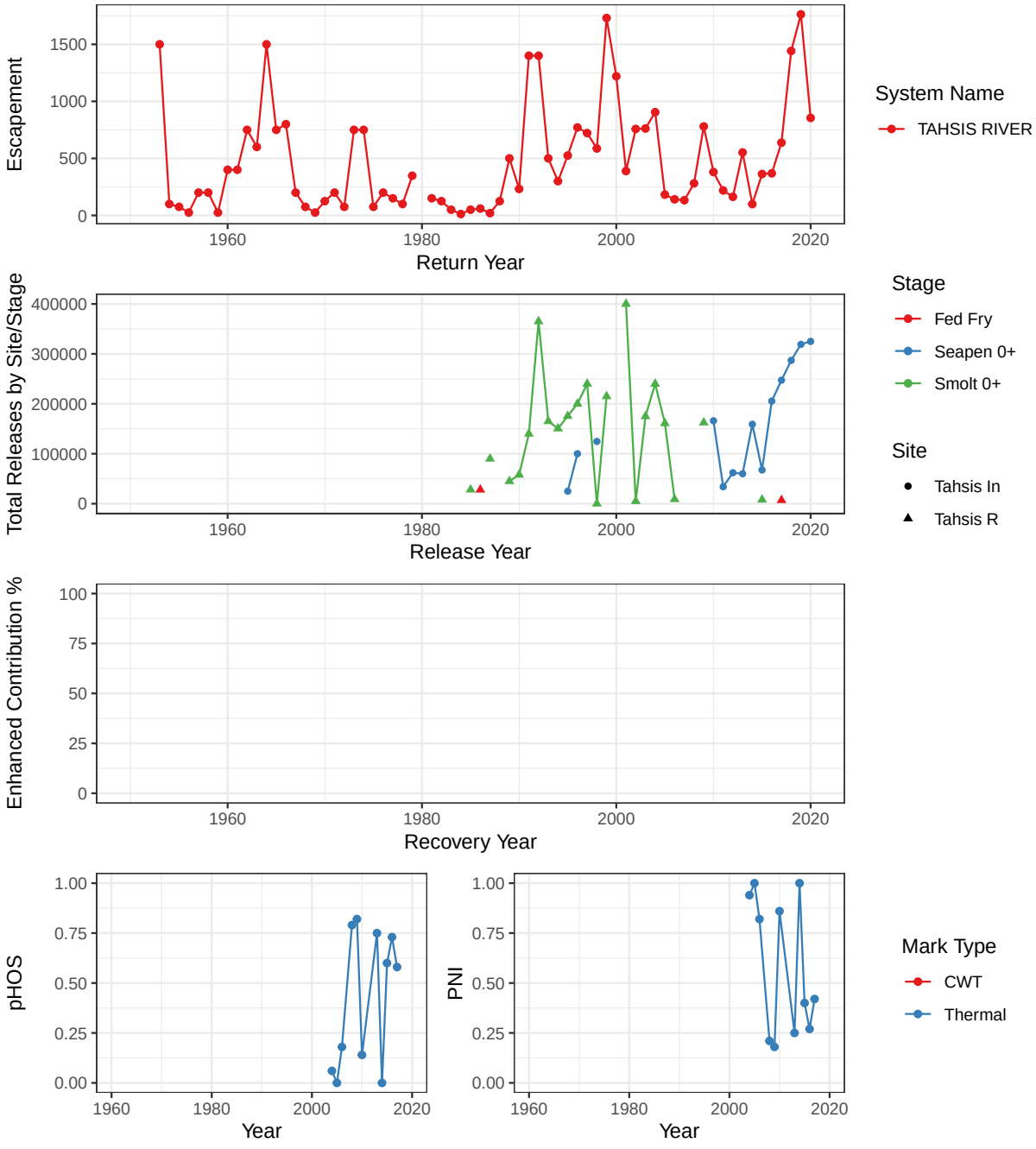
Sooke River (WCVI)



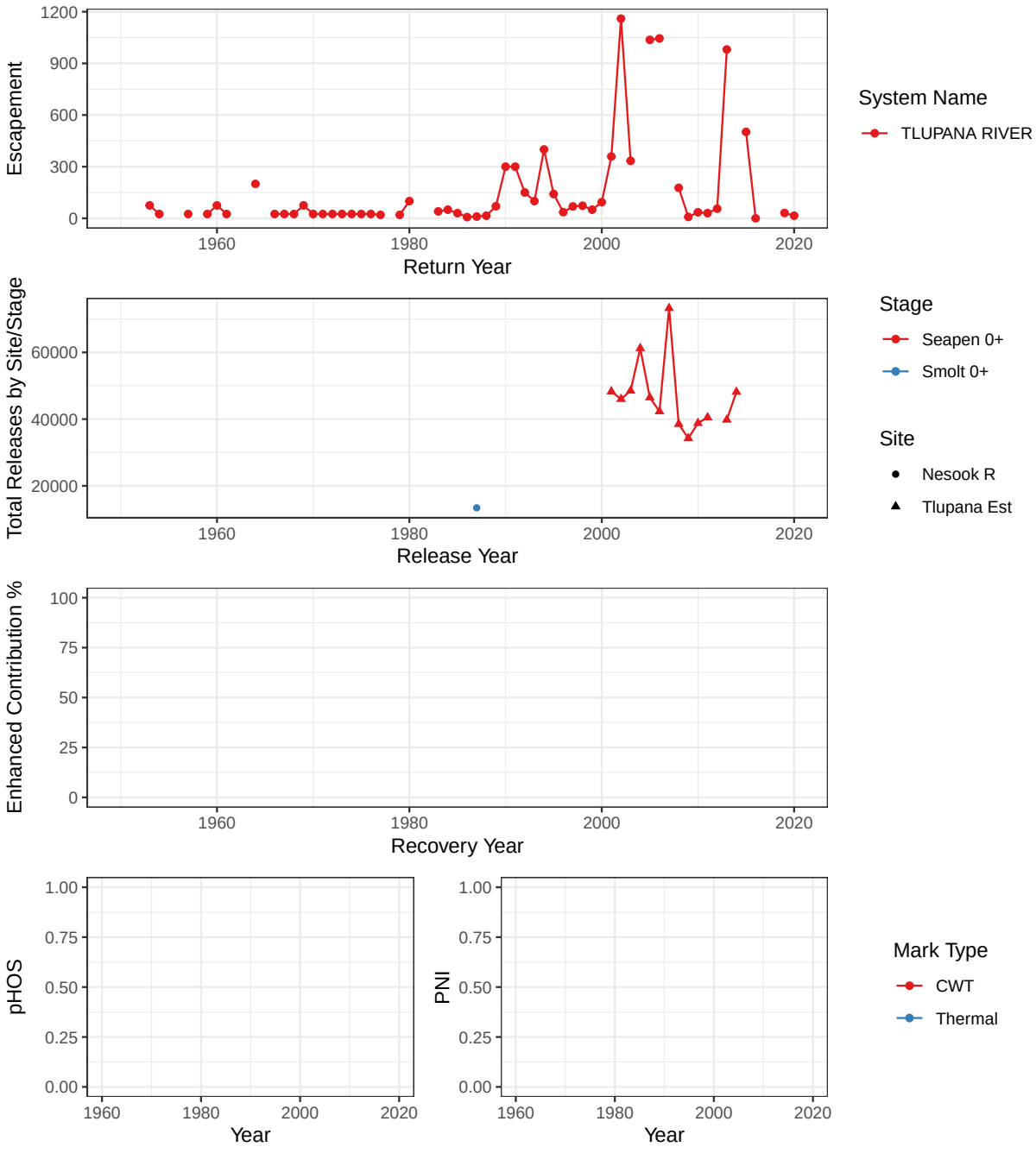
Sucwoa River (WCVI)

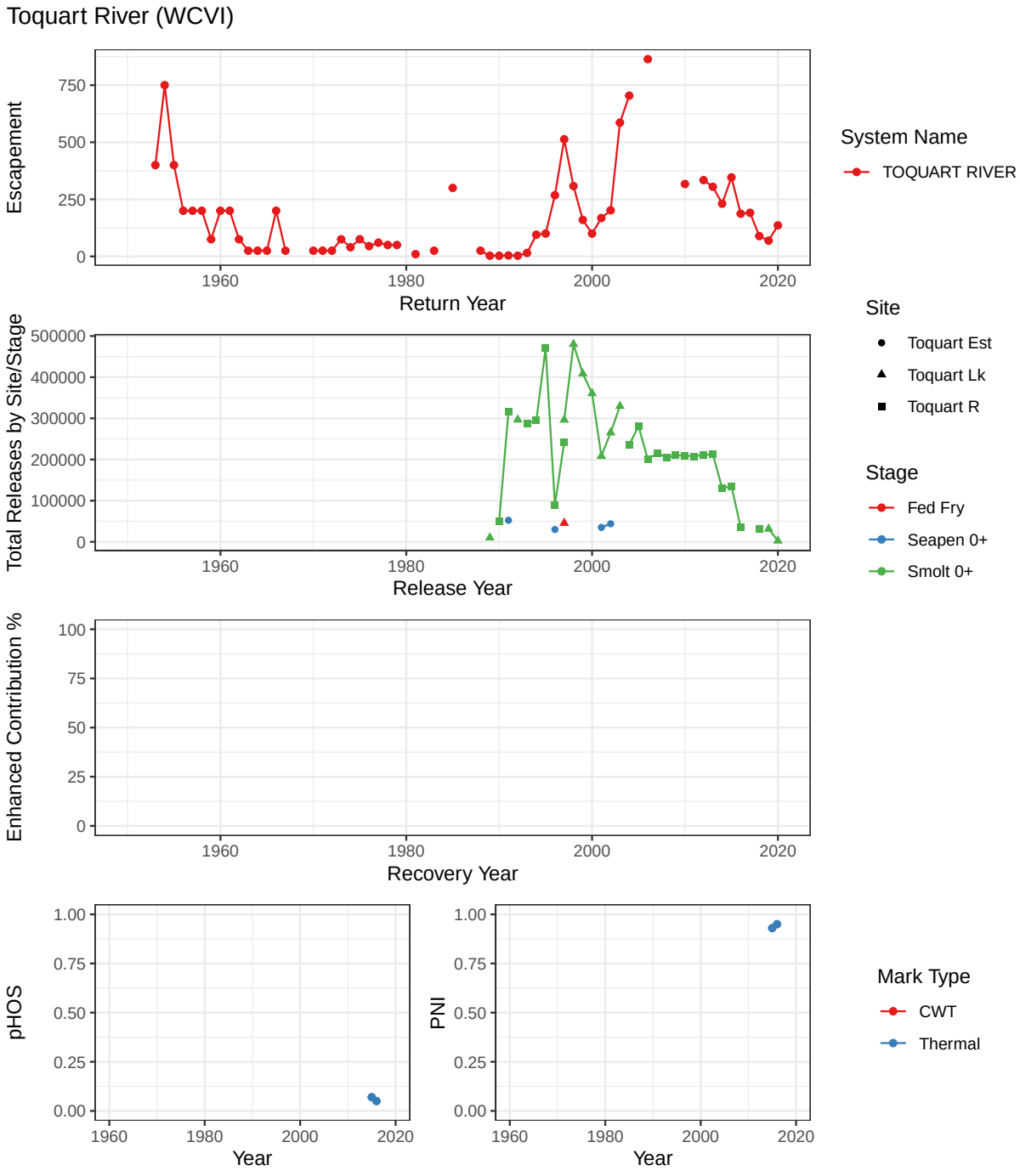


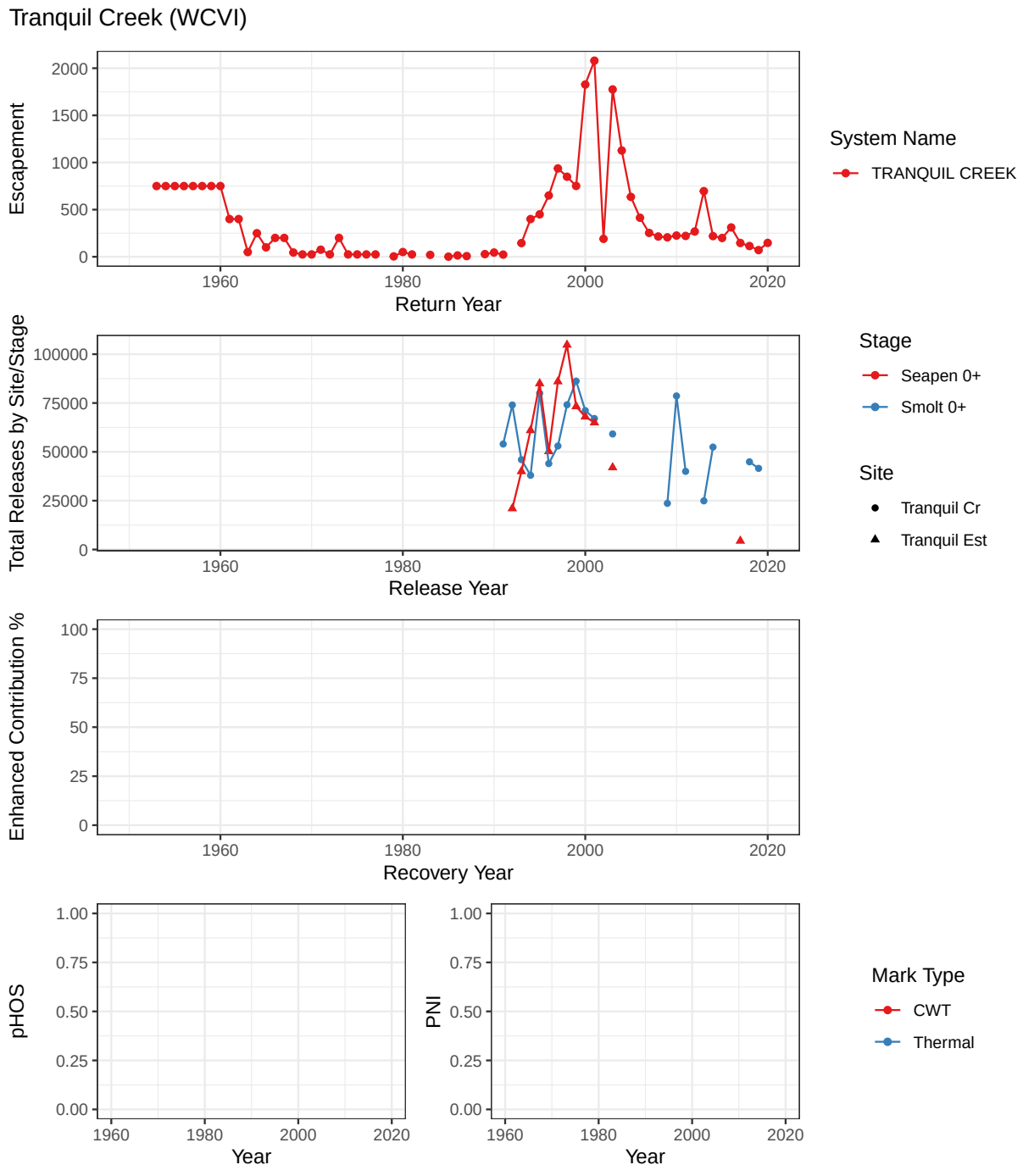
Tahsis River (WCVI)



Tlupana River (WCVI)




Toquart River (WCVI)
Escapement
750
500
250
0
1960
1980
2000
2020
Return Year
System Name
TOQUART RIVER
Total Releases by Site/Stage
500000
400000
300000
200000
100000
0
Release Year
Site
Toquart Est
Toquart Lk
Toquart R
Stage
Fed Fry
Seapen 0+
Smolt 0+
Enhanced Contribution %
100
75
50
25
Recovery Year
pHOS
1.00
0.75
0.50
0.25
0.00
Year
PNI
Mark Type
CWT
Thermal




```
fy<-1985
gl<-5

esc.gens<-esc%>%mutate(gen=case_when(year<fy-2*gl~"Pre",
                                     year>=fy-2*gl&year<=fy~"Pre 2GL",
                                     year>fy&year<=fy+gl~"Gen1",
                                     year>fy+gl&year<=fy+gl*2~"Gen2",
                                     year>fy+gl*2&year<=fy+gl*3~"Gen3",
                                     year>fy+gl*3~"Post Gen3"))
```

```
PNI<-fread("~/R/PSF Hatchery Review/PNI data/PNI summary for PSF November 05 2020.csv")

pni<-PNI%>%select(Return_Year,Region,Region2,Population,`Run Timing`,
                  `Hatchery Facility`,`Conservation Unit ID`,`Conservation Unit Name`,
                  `CU Acronym`,`PNI Estimate Type (CWT)`,pHOS_CWT,pNOB_CWT,PNI_CWT,
                  `Annual Biological Designation (CWT)`,`PNI Estimate Type (Thermal)`,
                  pHOS_Thermal,pNOB_Thermal,PNI_Thermal,`Annual Biological Designation (Thermal)`)

#list unique PNI systems
as.data.frame(pni%>%distinct(Population)%>%arrange())

sys.pni<-pni%>%filter(Population=="Sarita River")

names(sys.pni)

pni2<-sys.pni%>%select(year=Return_Year,pHOS_Thermal)

nos<-merge(esc.gens,pni2,all=TRUE)%>%
  mutate(nos=ifelse(gen=="Pre"|gen=="Pre 2GL",escapement,escapement*(1-pHOS_Thermal)))%>%
  mutate(wild=ifelse(gen=="Pre"|gen=="Pre 2GL",escapement,escapement*(1-pHOS_Thermal)^2))

cols<-brewer.pal(6,"Paired")

ggplot(esc.gens,aes(x=year,y=escapement,color=gen,fill=gen))+
  geom_boxplot(alpha=.4)+
  scale_fill_manual(values=cols)+
  scale_color_manual(values=cols)+
  #  scale_fill_brewer(palette="Paired")+
#  scale_color_brewer(palette="Paired")+
  geom_vline(xintercept=1985)+labs(x="Year",y="Escapement")+
  theme_bw()+
  theme(legend.position = "bottom")

ggsave("new new analysis/rebuilding2/test escapement sarita.png",dpi=600,height=5,width=4)

color2<-cols[c(3,4,5,6)]

ggplot(nos,aes(x=year,y=nos,color=gen,fill=gen))+
  geom_boxplot(alpha=.4)+
  scale_fill_manual(values=color2)+
  scale_color_manual(values=color2)+
  #  geom_jitter(aes(color=gen),position=position_jitter(width=1))+
  geom_vline(xintercept=1985)+labs(y="Natural Origin Spawners",x="Year")+
  theme_bw()+
  theme(legend.position = "none")

ggsave("new new analysis/rebuilding2/test nos sarita.png",dpi=600,height=4,width=4)

ggplot(nos,aes(x=year,y=wild,color=gen,fill=gen))+
  geom_boxplot(alpha=.4)+
  scale_fill_manual(values=color2)+
  scale_color_manual(values=color2)+
  #  geom_jitter(aes(color=gen),position=position_jitter(width=1))+
```

```
  geom_vline(xintercept=1985)+labs(y="Wild* Spawners",x="Year")+
  theme_bw()+
  theme(legend.position = "none")
```